

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 10-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Olstowski (US 3,719,608).
4. Olstowski teaches providing an oxidation resistant expanded graphite article wherein oxidation resistance is provided with a solution that can contain a mixture comprising a phosphorous element and a boron element (see column 5 lines 40-55 and claim 1). The phosphorous element and a boron element can be phosphorous oxides and boron oxides as claimed (see column 5 lines 20-25). The particle size of the additives is at least 100 mesh and preferably less than 325 mesh (column 6 lines 35-45) within applicant's claimed range.

5. The graphite is compressed and heat treated to from 800 to 1200 degrees (see column 6 and examples).
6. It is noted that in page 4 of the instant specification, applicant defines a coating layer to include more than a distinct layer. "Forming a coating layer includes forming a so-called coating on a surface of a shaped expanded graphite article, forming the coating on a shaped expanded graphite article and at the same time incorporating (impregnating) a part of the coating into the shaped expanded graphite article, and incorporating (impregnating) the coating to a certain depth (including to a core) of the shaped expanded graphite article, all of which are defined as being within the scope of the idea of coating layer." The solution treated graphite of Olstowski is considered a coated layer as claimed and defined in the specification; in the alternative, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a coating process, different from the disclosed process, in order to protect the finished article from oxidation or to provide other minor processing differences through routine experimentation and/or optimization of the final oxidation resistant product.
7. No patentable distinction is seen.

Claim Rejections - 35 USC § 103

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8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, and 6-9, 15-18, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Olstowski (US 3,719,608).

10. Olstowski teaches providing an oxidation resistant expanded graphite article wherein oxidation resistance is provided with a solution that can contain a mixture comprising a phosphorous element and a boron element (see column 5 lines 40-55 and claim 1). The phosphorous element and a boron element can be phosphorous oxides and boron oxides as claimed (see column 5 lines 20-25). The particle size of the additives is at least 100 mesh and preferably less than 325 mesh (column 6 lines 35-45) within applicant's claimed range.

11. The graphite is compressed and heat treated to from 800 to 1200 degrees (see column 6 and examples).

12. It is noted that in page 4 of the instant specification, applicant defines a coating layer to include more than a distinct layer. "Forming a coating layer includes forming a so-called coating on a surface of a shaped expanded graphite article, forming the coating on a shaped expanded graphite article and at the same time incorporating

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(impregnating) a part of the coating into the shaped expanded graphite article, and incorporating (impregnating) the coating to a certain depth (including to a core) of the shaped expanded graphite article, all of which are defined as being within the scope of the idea of coating layer.” The treated graphite of Olstowski incorporates particles into the graphite article making the entire graphite article part of the coated layer as claimed and defined in the instant specification. Since the graphite material is disclosed as having embodiments greater than 0.5 micrometers see examples) the coating layer is considered to be greater than 0.5 micrometers as claimed. No patentable distinction is seen.

13. Regarding claim 1, Olstowski (US 3,719,608) teaches all the elements of claim 1 but does not appear to disclose the taught mass percentages of boron and phosphate.

14. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the claimed percentages of boron (15 mass% or more) and phosphorus (2 mass% or more) including providing a greater concentration of boron than phosphorous by optimizing the oxidation resistant properties of the graphite article with mixture of boron and phosphorous additives. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

15. No patentable distinction is seen.

16. Olstowski (US 3,719,608) teaches all the elements of claims 15-18, but is silent as to the boron and phosphorus elements being present before expanding the graphite, as required by claim 15.

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17. It would have been obvious to one of ordinary skill in the art at the time of the invention to rearrange the steps of Olstowski and provide the additives in the graphite before expanding the graphite flakes with the expectation that no significant change to the properties of final product would be made. See *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results); *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients is prima facie obvious). No patentable distinction is seen.

Response to Arguments

18. Applicant's arguments filed 9/11/2009 have been fully considered but they are not persuasive.

19. The 112 rejection of claim 9 has been withdrawn due to amendment of claim to fix dependency issues raised by the examiner.

20. Regarding claim 1, Olstowski (US 3,719,608) teaches all the elements of claim 1 but does not appear to disclose the taught mass percentages of boron and phosphate.

21. The examiner has provided an articulated reasoning for why it is obvious to provide the claimed invention. The Examiner has asserted that it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the claimed percentages of boron (15 mass% or more) and phosphorus (2 mass% or more) including providing a greater concentration of boron than phosphorous by optimizing the oxidation resistant properties of the graphite article with mixture of boron and phosphorous additives. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

22. No patentable distinction is seen. Applicant has not fully addressed this rationale for the rejection.

23. Applicant acknowledges that the reference teaches mixing the two oxidation resistant compounds (even if passingly as characterized by applicant). It is noted that even if it did not "(i)t is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Applicant has not demonstrated any unexpected results in the taught compositional percentages. Rejection maintained.

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24. Applicant's amendment to independent claim 10 requiring providing a coating is not considered to patentably distinguish between the cited art and the instant claimed invention.

25. It is noted that in page 4 of the instant specification, applicant defines a coating layer to include more than a distinct layer. "Forming a coating layer includes forming a so-called coating on a surface of a shaped expanded graphite article, forming the coating on a shaped expanded graphite article and at the same time incorporating (impregnating) a part of the coating into the shaped expanded graphite article, and incorporating (impregnating) the coating to a certain depth (including to a core) of the shaped expanded graphite article, all of which are defined as being within the scope of the idea of coating layer." The solution treated graphite of Olstowski is considered a coated layer as claimed and defined in the specification; in the alternative, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a coating process in order to protect the article from oxidation.

26. No patentable distinction is seen.

Conclusion

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MILLER whose telephone number is (571)272-1534. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571)272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Miller

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794